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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/605,648	10/15/2003	Tzeng-Chih Chiou	ACMP0034USA	2647

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EXAMINER	
DEAN, RAYMOND S	

ART UNIT	PAPER NUMBER
2618	

DATE MAILED: 07/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/605,648	CHIOU, TZENG-CHIH	
	Examiner	**Art Unit**	
	Raymond S. Dean	2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 15 October 2003.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1 - 25 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1 - 25 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on 15 October 2003 is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 3, 8, 20 recite the limitation "**the** element parameter" in lines 4 – 5 of Claim 3, line 12 of Claim 8, and line 17 of Claim 20. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 14 – 15, 18 – 21, 24 – 25 are rejected under 35 U.S.C. 102(e) as being anticipated by Wallace (US 2003/0186667).

Regarding Claim 14, Wallace teaches a mobile phone comprising: a baseband circuit for generating a first communication signal and a second communication signal (Sections 0023 lines 3 – 5, 0028, typical dual band mobile phones comprise baseband

circuits for generating a communication signal in each band); a first power controller electrically connected to the baseband circuit for adjusting power of the first communication signal (Figure 3, Section 0028, the first communications band module (230) comprises conventional communications circuitry such a power amplifiers (PA), which are power controllers); a first matching circuit electrically connected to the first power controller for receiving the first communication signal from the first power controller, and for adjusting a phase or a magnitude between a current and a voltage of the first communication signal to generate a corresponding first transmitting signal (Figure 4, Section 0030 lines 5 – 14, typical antenna matching circuits adjust a phase or magnitude between a current and voltage of a communication signal as a result of impedance matching); a second power controller electrically connected to the baseband circuit for adjusting power of the second communication signal to generate a corresponding second transmitting signal (Figure 3, Section 0028, the second communications band module (240) comprises conventional communications circuitry such a power amplifiers (PA), which are power controllers); an antenna for wirelessly broadcasting the first transmitting signal and the second transmitting signal (Figure 1, antenna (110)); a diplexer having an output port electrically connected to the antenna, and two input ports respectively electrically connected to the first matching circuit and the second power controller, the diplexer being used to transmit the first transmitting signal and the second transmitting signal to the antenna (Figure 4, diplexer (220) is electrically connected to first matching circuit (170a) and electrically connected to the communications band module (240), which comprises conventional communications

circuitry such a power amplifiers (PA), which are power controllers); wherein the first matching circuit is capable of changing the phase or the magnitude between the current and the voltage of the first communication signal without changing the phase or the magnitude between the current and the voltage of the second transmitting signal, such that the field pattern of the antenna for transmitting the first transmitting signal in a wireless manner is not affected as that of the antenna for transmitting the second transmitting signal in a wireless manner (Section 0030 lines 5 – 14, the matching circuits will change the phase or magnitude between the current and voltage thus producing a particular antenna gain pattern, there is a matching circuit for each band thus the communication signal in the PCS band will not be affected by matching circuit for the cellular band and vice versa and thus the gain pattern for the PCS band will not be affected as that of the gain pattern for the cellular band and vice versa).

Regarding Claim 20, Wallace teaches a method for adjusting properties of a mobile phone, the mobile phone comprising: a baseband circuit for generating a first communication signal and a second communication signal (Sections 0023 lines 3 – 5, 0028, typical dual band mobile phones comprise baseband circuits for generating a communication signal in each band); a first power controller electrically connected to the baseband circuit for adjusting power of the first communication signal (Figure 3, Section 0028, the first communications band module (230) comprises conventional communications circuitry such a power amplifiers (PA), which are power controllers); a first matching circuit electrically connected to the first power controller for receiving the first communication signal from the first power controller, and for adjusting a phase or a

magnitude between a current and a voltage of the first communication signal to generate a corresponding first transmitting signal (Figure 4, Section 0030 lines 5 – 14, typical antenna matching circuits adjust a phase or magnitude between a current and voltage of a communication signal as a result of impedance matching); wherein the first matching circuit has at least an electrical element; the phase or magnitude between the current and the voltage of the first communication signal being changed as the element parameter of the electrical element is changed (Figure 5, Section 0031 lines 3 – 5, the capacitors are the electrical elements, said capacitors have the capability of changing the phase or magnitude between the current and voltage of a signal, the element parameter is the capacitance); a second power controller electrically connected to the baseband circuit for adjusting power of the second communication signal to generate a corresponding second transmitting signal (Figure 3, Section 0028, the second communications band module (240) comprises conventional communications circuitry such a power amplifiers (PA), which are power controllers); an antenna for wirelessly broadcasting the first transmitting signal and the second transmitting signal (Figure 1, antenna (110)); a diplexer having an output port electrically connected to the antenna, and two input ports respectively electrically connected to the first matching circuit and the second power controller, the diplexer being used to transmit the first transmitting signal and the second transmitting signal to the antenna (Figure 4, diplexer (220) is electrically connected to first matching circuit (170a) and electrically connected to the communications band module (240), which comprises conventional communications circuitry such a power amplifiers (PA), which are power controllers); the method

comprising changing the element parameter of the electrical element of the first matching circuit, such that the first matching circuit is capable of changing the phase or the magnitude between the current and the voltage of the first communication signal without changing the phase or the magnitude between the current and the voltage of the second transmitting signal, such that the field pattern of the antenna for transmitting the first transmitting signal in a wireless manner is not affected as that of the antenna for transmitting the second transmitting signal in a wireless manner (Section 0030 lines 5 – 14, the matching circuits will change the phase or magnitude between the current and voltage thus producing a particular antenna gain pattern, there is a matching circuit for each band thus the communication signal in the PCS band will not be affected by matching circuit for the cellular band and vice versa and thus the gain pattern for the PCS band will not be affected as that of the gain pattern for the cellular band and vice versa).

Regarding Claims 15, 21, Wallace teaches all of the claimed limitations recited in Claims 14, 20. Wallace further teaches a second matching circuit electrically connected between the diplexer and the second power controller for changing the phase or the magnitude between the current and the voltage of the second transmitting signal without changing the phase or the magnitude between the current and the voltage of the first transmitting signal, such that the field pattern of the antenna for transmitting the second transmitting signal in a wireless manner is not affected as that of the antenna for transmitting the first transmitting signal in a wireless manner (Figure 4, Section 0030 lines 5 – 14, second matching circuit (170b), the matching circuits will

change the phase or magnitude between the current and voltage thus producing a particular antenna gain pattern, there is a matching circuit for each band thus the communication signal in the PCS band will not be affected by matching circuit for the cellular band and vice versa and thus the gain pattern for the PCS band will not be affected as that of the gain pattern for the cellular band and vice versa).

Regarding Claims 18, 24, Wallace teaches all of the claimed limitations recited in Claims 14, 20. Wallace further teaches wherein the baseband circuit controls the first communication signal and the second communication signal operating at different frequency bands (Sections 0023 lines 3 – 5, 0028, typical dual band mobile phones comprise baseband circuits for generating a communication signal in each band).

Regarding Claims 19, 25, Wallace teaches all of the claimed limitations recited in Claims 14, 20. Wallace further teaches a microphone electrically connected to the baseband circuit for receiving sound waves to generate an audio signal, the baseband circuit being used for processing the audio signal to generate the first communication signal and the second communication signal (Sections 0023 lines 3 – 5, 0028, typical dual band mobile phones comprise baseband circuits for generating a communication signal in each band in response to audio signals such as voice, typical dual band mobile phones also comprise microphones).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1 – 5, 7 – 10, 12 – 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kouyama (US 6,643,497) in view of Yamada (US 6,804,508).

Regarding Claim 1, Kouyama teaches a mobile phone comprising: a baseband circuit for generating a communication signal (Figures 1, 2, Column 6 lines 12 – 15, lines 49 – 58, transmission signal processing circuit (32) is the baseband circuit); a matching circuit electrically connected to the baseband circuit for adjusting a phase or a magnitude between a current and a voltage of the communication signal to generate a corresponding transmitting signal (Figure 1, Column 7 lines 10 – 17, typical antenna matching circuits adjust a phase or magnitude between a current and voltage of a communication signal as a result of impedance matching); an antenna for wirelessly broadcasting the transmitting signal to generate a corresponding receiving signal (Figure 1, antenna (1)); a receiving circuit for transmitting the receiving signal to a baseband circuit (Figure 1, receiver subsection (21)); and a duplexer electrically connected between the matching circuit and the antenna for transmitting the transmitting signal to the antenna and for transmitting the receiving signal to the receiving circuit (Figure 1, duplexer (10), the duplexer, which is electrically connected

to the antenna, comprises the matching circuits, which are electrically connected to said duplexer); wherein the matching circuit is capable of changing the phase or the magnitude between the current and the voltage of the communication signal without changing the phase or the magnitude between the current and the voltage of the receiving signal, such that the field pattern of the antenna for signal-transmitting in a wireless manner is not affected as that of the antenna for signal-receiving in a wireless manner (Figure 1, Column 7 lines 10 – 17, a matching circuit used in a mobile phone for both the transmission path and the reception path is typically optimized for both said paths thus enabling optimal gain patterns for both the receive and transmit paths, in order for the optimal gain pattern in both paths to occur the matching circuit will change/not change the phase or magnitude between the current and voltage of a transmission signal without changing the phase or magnitude between the current and voltage of a receiving signal).

Kouyama does not teach a baseband circuit generating a communication signal and receiving the transmitted receiving signal.

Yamada teaches a baseband circuit that generates a communication signal and receives a signal (Column 3 line 54, lines 64 – 66).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the baseband circuit of Yamada in the mobile phone circuitry of Kouyama as an alternative means processing baseband signals thus reducing the amount circuit components used in said mobile phone.

Regarding Claim 8, Kouyama teaches a method for adjusting properties of a mobile phone, the mobile phone comprising: a baseband circuit for generating a communication signal (Figures 1, 2, Column 6 lines 12 – 15, lines 49 – 58, transmission signal processing circuit (32) is the baseband circuit); a matching circuit electrically connected to the baseband circuit for adjusting a phase or a magnitude between a current and a voltage of the communication signal to generate a corresponding transmitting signal (Figure 1, Column 7 lines 10 – 17, typical antenna matching circuits adjust a phase or magnitude between a current and voltage of a communication signal as a result of impedance matching), wherein the matching circuit has at least an electrical element, the phase or the magnitude between the current and the voltage of the communication signal being changed as the element parameter of the electrical element is changed (Figure 3, Column 8 lines 57 – 59, the capacitors are the electrical elements, said capacitors have the capability of changing the phase or magnitude between the current and voltage of a signal, the element parameter is the capacitance); an antenna for wirelessly broadcasting the transmitting signal to generate a corresponding receiving signal (Figure 1, antenna (1)); a receiving circuit for transmitting the receiving signal to a baseband circuit (Figure 1, receiver subsection (21)); and a duplexer electrically connected between the matching circuit and the antenna for transmitting the transmitting signal to the antenna and for transmitting the receiving signal to the receiving circuit (Figure 1, duplexer (10), the duplexer, which is electrically connected to the antenna, comprises the matching circuits); the method comprising: changing the element parameter of the electrical element of the matching

circuit so as to change the phase or the magnitude between the current and the voltage of the communication signal without changing the phase or the magnitude between the current and the voltage of the receiving signal, such that the field pattern of the antenna for signal-transmitting in a wireless manner remains the same as that of the antenna for signal-receiving in a wireless manner (Figure 1, Column 7 lines 10 – 17, a matching circuit used in a mobile phone for both the transmission path and the reception path is typically optimized for both said paths thus enabling optimal gain patterns for both the receive and transmit paths, in order for the optimal gain pattern in both paths to occur the matching circuit will change/not change the phase or magnitude between the current and voltage of a transmission signal without changing the phase or magnitude between the current and voltage of a receiving signal).

Kouyama does not teach a baseband circuit generating a communication signal and receiving the transmitted receiving signal.

Yamada teaches a baseband circuit that generates a communication signal and receives a signal (Column 3 line 54, lines 64 – 66).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the baseband circuit of Yamada in the mobile phone circuitry of Kouyama as an alternative means processing baseband signals thus reducing the amount circuit components used in said mobile phone.

Regarding Claims 2, 13, Kouyama in view of Yamada teaches all of the claimed limitations recited in Claims 1, 8. Kouyama further teaches a microphone electrically connected to a baseband circuit for receiving sound waves to generate an audio

signal, the baseband circuit being used for processing the audio signal to generate the communication signal (Column 6 lines 12 – 15, lines 49 – 58, typical mobile phones comprise microphones); and a speaker electrically connected to a baseband circuit; wherein the baseband circuit is further used for processing the receiving signal to generate a corresponding sound signal, the speaker being used for transforming the sound signal into sound waves (Column 6 lines 12 – 15, lines 41 – 48, typical mobile phones comprise speakers).

Regarding Claim 3, Kouyama in view of Yamada teaches all of the claimed limitations recited in Claim 1. Kouyama further teaches wherein the matching circuit has at least an electrical element, the phase or the magnitude between the current and the voltage of the communication signal being changed as the element parameter of the electrical element is changed (Figure 3, Column 8 lines 57 – 59, the capacitors are the electrical elements, said capacitors have the capability of changing the phase or magnitude between the current and voltage of a signal, the element parameter is the capacitance).

Regarding Claims 4, 9, Kouyama in view of Yamada teaches all of the claimed limitations recited in Claims 3, 8. Kouyama further teaches wherein the electrical element is a capacitor, and the element parameter is a capacitance (Figure 3, Column 8 lines 57 – 59, since there are capacitors there will be capacitance).

Regarding Claims 5, 10, Kouyama in view of Yamada teaches all of the claimed limitations recited in Claims 3, 8. Kouyama further teaches wherein the electrical element is an inductor, and the element parameter is an inductance of the inductor

(Figure 3, Column 8 lines 57 – 59, the coils are the inductors, since there are inductors there will be inductance).

Regarding Claims 7, 12, Kouyama in view of Yamada teaches all of the claimed limitations recited in Claims 1, 8. Kouyama further teaches a second matching circuit electrically connected between the duplexer and the receiving circuit for changing the phase or the magnitude between the current and the voltage of the receiving signal to adjust the field pattern of the antenna for signal-receiving (Figure 1, Column 7 lines 10 – 17, the duplexer comprises matching circuits (11,12) that are electrically connected to the receiver subsection (21), a matching circuit used in a mobile phone for both the transmission path and the reception path is typically optimized for both said paths thus enabling optimal gain patterns for both the receive and transmit paths, in order for the optimal gain pattern in both paths to occur the matching circuit will change the phase or magnitude between the current and voltage of a transmission signal).

7. Claims 6, 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kouyama (US 6,643,497) in view of Yamada (US 6,804,508), as applied to Claims 1, 8 above, and further in view of Epperson (US 6,567,647).

Regarding Claims 6, 11, Kouyama in view of Yamada teaches all of the claimed limitations recited in Claims 1, 8. Kouyama further teaches a power controller electrically connected between the baseband circuit and the matching circuit for adjusting the power of the communication signal, and for then transmitting the adjusted communication signal to the matching circuit (Figure 1, Column 6 lines 32 – 36, the

transmitter subsection (22) amplifies the signal thus the transmitter is acting as the power controller).

Kouyama in view of Yamada does not teach an isolator electrically connected between the matching circuit and the power controller for transmitting the communication signal from the power controller to the matching circuit, and for reducing the reflected signal from the matching circuit to the power controller to protect the power controller.

Epperson teaches isolator electrically connected between a duplexer, which typically comprises matching circuits, and the power controller for transmitting the communication signal from the power controller to the duplexer, and for reducing the reflected signal from the duplexer to the power controller to protect the power controller (Column 1 lines 46 – 52, Column 5 lines 10 – 13).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mobile phone circuitry of Kouyama in view of Yamada with the isolator of Epperson for the purpose of enabling radio frequency energy to pass in one direction while providing high isolation to reflected energy in the reverse direction as taught by Epperson.

8. Claims 16 – 17, 22 – 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wallace (US 2003/0186667) in view of Toncich (US 6,816,714).

Regarding Claims 16, 22, Wallace teaches all of the claimed limitations recited in Claims 14, 20. Wallace does not teach a second isolator, electrically connected

between the second matching circuit and the second power controller, for transmitting the second transmitting signal from the second power controller to the second matching circuit, and for reducing the signal reflected from the second matching circuit to the second power controller, so as to protect the second power controller.

Toncich teaches a second isolator, electrically connected between a second duplexer, which typically comprises matching circuits, and the second power controller, for transmitting the second transmitting signal from the second power controller to the second duplexer, and for reducing the signal reflected from the second duplexer to the second power controller, so as to protect the second power controller (Figure 11, second isolator (196), second power controller (200), isolators are typically used for reducing the reflected energy).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mobile phone circuitry of Wallace with the isolator of Toncich for the purpose of enabling radio frequency energy to pass in one direction while providing high isolation to reflected energy in the reverse direction, which is a typical function of isolators.

Regarding Claims 17, 23, Wallace teaches all of the claimed limitations recited in Claims 14, 20. Wallace does not teach a first isolator, electrically connected between the first matching circuit and the first power controller, for transmitting the first transmitting signal from the first power controller to the first matching circuit, and for reducing the signal reflected from the first matching circuit to the first power controller, so as to protect the first power controller.

Toncich teaches a first isolator, electrically connected between a first duplexer, which typically comprises matching circuits, and the first power controller, for transmitting the first transmitting signal from the first power controller to the first duplexer, and for reducing the signal reflected from the first duplexer to the first power controller, so as to protect the first power controller (Figure 11, first isolator (194), second power controller (198), isolators are typically used for reducing the reflected energy).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the mobile phone circuitry of Wallace with the isolator of Toncich for the purpose of enabling radio frequency energy to pass in one direction while providing high isolation to reflected energy in the reverse direction, which is a typical function of isolators.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Raymond S. Dean whose telephone number is 571-272-7877. The examiner can normally be reached on Monday-Friday 6:00-2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward F. Urban can be reached on 571-272-7899. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Raymond S. Dean
July 3, 2006

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